UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,676	03/16/2004	Kenji Nakajima	Q80045	4734

23373 7590 10/24/2006

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
YU, MELANIE J	

ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/800,676	NAKAJIMA ET AL.	
	Examiner	Art Unit	
	Melanie Yu	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *9-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments filed 4 August 2006 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites that the first and second layer are in one region are connected with a first and second layer corresponding to an adjacent region at one surface of the base plate. It is unclear whether the first and second layer may be connected through the base plate, or whether the first and second layers of one region must directly be connected with the first and second layers of another region. It is unclear how porous material filled in a plurality of physically separate holes, wherein the porous material is not placed anywhere outside the holes, would be capable of being connected with a first and second layer in another region unless the first and second layer of two separate holes are connected through the base plate.

Regarding claim 2, it is further unclear how the first and second layer are present below the base plate outside of the adsorptive regions, when each of the adsorptive regions comprises a first layer and a second layer. It is vague as to how the first and the second layers could be present both within the adsorptive region and below the base plate outside of the adsorptive regions.

Claim Rejections - 35 USC § 103

1. Claims 1, 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hess et al. (US 2002/0094533) in view of Ogawa (US 6,492,119).

Hess et al. teach an analysis unit comprising: a base plate, which has a plurality of holes (plates have through-holes, par. 10-11); a porous adsorptive material which is filled in each of the plurality of the holes of the base plate and forms each of a plurality of adsorptive regions (through-holes contain porous material, par. 11, 15), but fail to teach the adsorptive regions comprising a first and second layer.

Ogawa teaches a first porous layer and a second porous layer wherein the first layer has a mean pore diameter that is larger (2a, Fig. 2; col. 2, lines 53-57) than a mean pore diameter of the second layer (2b, Fig. 2; col. 2, lines 57-59), in order to provide an array that does not suffer from bending and creasing which adversely affects analytic operations.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use as the porous material in the adsorptive region of the analysis unit of Hess et al., a first porous layer and a second porous layer wherein the first layer has a mean pore diameter later than a mean pore diameter of the second layer as taught by Ogawa, in order to provide efficient application and immobilization of probes to the porous material in the through-hole because the solvent comprising the probe is quickly introduced toward the bottom of the hole.

With respect to claim 3, Ogawa teaches a small and large mean pore diameter size which encompasses a ratio of the mean pore diameter of the second layer to the mean pore diameter of the first layer being at most 0.7 (small mean pore diameter is between 0.1 and 1.0 μm, col. 5, lines 19-22; large mean pore diameter is between 1.0 and 200 μm; col. 7, lines 8-26 describe a small mean pore diameter of 0.2 μm and a large mean pore diameter of 10 μm, therefore if the large mean pore diameter is taken as 1, the small mean pore diameter is 0.02, which encompasses the recited at most 0.7).

Regarding claims 5 and 7, Hess et al. teach the base plate constituted of a material having radiation and/or light attenuating properties (base plate coated with copper, gold or

silver, which produces a light attenuating substrate, par. 16; base plate may be ceramic, par. 13; base plate may alternatively be made of PMMA, polystyrene or epoxy resins, par. 19).

2. Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hess et al. (US 2002/0094533) in view of Ogawa (US 6,492,119), as applied to claim 1, further in view of Ogura (US 2002/0061534).

Hess et al. in view of Ogawa, as applied to claim 1, teach a biochemical analysis unit comprising a first and second porous layer, wherein the first and second players of the adsorptive regions is connected with a first and second layer corresponding to an adjacent one of the adsorptive regions (Hess et al. teach porous material in each of a plurality of through holes, par. 11, 15; when porous layers of Ogawa are substituted for the porous material of Hess et al., the first and second porous layers are connected through the base plate, Hess et al. Fig. 9, holes are adjacent to each other and porous material is connected through base plate material), but fail to teach a signal absorbing layer for absorbing a signal.

Ogura teaches a signal absorbing layer for absorbing a signal under a base plate (light absorbing materials are added to substrate par. 110; 11, Fig. 4 and 5, is a layer on the base plate 1, par. 247-248 and has light attenuating properties, therefore the support, 11, can have light absorbing materials in order to enhance light attenuating) and an adsorptive substrate below the base plate (par. 387; layer, 152, is below base plate, 154)., in order to enhance light attenuating properties.

Therefore it would have been obvious to include in the biochemical analysis unit of Hess et al. in view of Ogawa, a signal absorbing layer for absorbing a signal under a base plate as taught by Ogura, in order to prevent noise caused by scattering during irradiation and to enhance detection signals. By placing the signal absorbing layer below the base

plate of Hess et al. in view of Ogawa, the signal absorbing layer is present below the adsorptive regions that contain the first and second layers, as described above, and are therefore present below the first and second layers in the adsorptive regions and when Ogura is combined with Ogawa, the layers are both within and below the base plate.

With respect to claim 4, Ogawa, as applied to claim 3, teaches a small and large mean pore diameter size which encompasses a ratio of the mean pore diameter of the second layer to the mean pore diameter of the first layer being at most 0.7.

Regarding claims 6 and 8, Hess et al., as applied to claim 5, teach a base plate constituted of a material having light attenuating properties.

Response to Arguments

3. Previous rejections under 35 USC 112, first paragraph and rejections of claims 1, 3, 5 and 7 under 35 USC 112, second paragraph have been withdrawn in light of applicant's arguments.

4. Applicant's arguments filed 4 August 2006 have been fully considered but they are not persuasive.

With respect to the rejection of claims 2, 4, 6 and 8 under 35 USC 112, second paragraph, applicant's arguments are not persuasive because the claim does not recite the description, therefore the claim remains vague and indefinite. Although the claims are to be read in light of the specification, claim 2 remains contradictory because the adsorptive material is recited as being both within regions of the base plate and outside of the base plate. The claim is not clear as to how the first and second adsorptive material is present in both places and whether the same first and second layers are both within and outside the base plate.

Regarding the rejection of claims 1, 3, 5 and 7 under 35 USC 103(a), applicant argues that Hess and Ogawa do not disclose the advantageous combination of structural

features wherein, a layer of large mean pore diameter is combined with a layer of small mean pore diameter in order to provide suppressing of signal noise propagating between the adjacent holes. Applicant's argument is not persuasive because the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

With respect to the rejection of claims 2, 4, 6 and 8 under 35 USC 103(a), applicant argues that in the references of Hess, Ogawa and Ogura, the adsorptive material is confined to the holes and fail to teach the first and second layer present below the base plate outside of the adsorptive regions. However, applicant's argument is not persuasive because as described above, Ogura teaches an adsorptive substrate below the base plate (par. 387; layer, 152, is below base plate, 154, therefore when combined with Ogawa, the layers are both within and below the base plate).

Conclusion

No claims are allowed.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Yu whose telephone number is (571) 272-2933. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Melanie Yu
Patent Examiner
Art Unit 1641

LONG V. LE 10/13/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600